

Validation of the 18-Item Ego Strength Scale (Es18) in a University Student Sample: Convergent, Discriminant, and Incremental Validity

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ABSTRACT - Ego strength reflects the capacity to regulate affect, maintain reality contact, and sustain coherent functioning under stress. This study examined the psychometric properties of the Ego Strength-18 (Es18), a brief version of Barron's (1953) Ego Strength Scale. Undergraduate participants ($N = 162$) completed the Es18 and measures of depression, anxiety, schizotypy, self-fragmentation, ego boundaries, self-esteem, attachment security, and social desirability. The Es18 showed adequate internal consistency ($\alpha = .82$) and predicted patterns consistent with theory: higher ego strength was associated with lower distress and fragmentation and higher self-esteem and secure attachment. The scale was unrelated to social desirability, supporting discriminant validity. Incremental validity analyses indicated that the Es18 was related to personality functioning outside of general distress. Findings support the Es18 as a relatively reliable, valid, and efficient measure of ego functioning useful for research on resilience, personality integration, and self-regulation.

Keywords:

Ego strength;
Psychodynamic
constructs;
Personality
assessment; Self-
regulation;
Resilience;
Convergent validity;
Identity integration

Introduction

Ego strength is a foundational construct in personality and psychodynamic psychology, conceptualized as the capacity to maintain coherent and adaptive functioning under stress, regulate impulses, tolerate affective distress, and sustain contact with reality (Barron, 1953; Butcher et al., 1989). Individuals with higher ego strength are thought to exhibit greater vitality, self-direction, and resilience, reflecting an integrated and adaptive psychic organization.

Historically, ego strength has been linked to psychotherapeutic outcomes, personality functioning, and overall psychological health, establishing it as a key variable in both clinical and research contexts (Gottesman, 1959; Freud, 1923).

The best-known operationalization of ego strength is Barron's (1953) 68-item Ego Strength Scale (ES), originally developed by selecting items from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) that predicted positive psychotherapy outcomes over six months. The ES has demonstrated criterion validity by distinguishing psychiatric from nonclinical populations (Gottesman, 1959), and correlates predictably with theoretically related constructs such as self-efficacy (Sherer et al., 1982), conscientiousness, extraversion, and lower neuroticism (Quirk et al., 2003). These findings collectively suggest that ego strength reflects a constellation of regulatory, cognitive-affective, and behavioral capacities central to adaptive functioning.

Despite the theoretical and empirical value of the ES, the 68-item length has limited its practicality in contemporary research. To address this limitation, Kelly and Daughtry (2018) developed the Es18, an 18-item short form of Barron's scale specifically for use in undergraduate samples. The Es18 retains the True-False format and items with the highest item-total correlations in the original scale, and initial analyses demonstrated strong internal consistency ($\alpha = .78$) and a high correlation with the full ES ($r = .86$), suggesting good preliminary reliability and validity. However, beyond its association with the longer ES, the Es18 has not yet been comprehensively validated against external measures of theoretically relevant constructs.

Theoretical frameworks in psychodynamic and personality psychology provide guidance for hypothesized associations. Ego strength is posited to emerge from cohesive psychic organization and strong ego boundaries, which facilitate reality testing, self-esteem regulation, adaptive object relations, and resistance to fragmentation under stress (Cabaniss et al., 2011; Harmon et al., 1980; Freud, 1923). Accordingly, higher ego strength should be negatively associated with measures of psychological distress, such as depression, anxiety, schizotypal traits, self-fragmentation, and thin boundaries, and positively associated with self-esteem, secure attachment, and overall regulatory coherence. Evaluating these associations would provide a relatively thorough investigation of the scale's convergent validity.

Empirical studies also support this conceptualization. For example, individuals with thin psychological boundaries tend to exhibit greater cognitive-emotional volatility and less ego integration, while schizotypal traits indicate deficits in reality testing and self-coherence (Jackson & Claridge, 1991; Kunzendorf et al., 1997). Self-fragmentation, measured via self-splitting scales, captures difficulties in identity integration and internal regulation (Gould et al., 1996). In contrast, secure attachment and self-esteem reflect adaptive object relations and effective self-evaluation (Mikulincer et al., 1990; Tambs & Røysamb, 2014). Theoretical propositions thus suggest that the Es18 should have a nomological network with correlations predictable directions with both adaptive and maladaptive constructs.

A further approach to examining a measure's validity is the extent to which it does not significantly correlate with hypothetically unrelated measures. This concept is referred to as discriminant validity (Drummond et al., 2019). With regards to this concept, ego strength should not relate significantly to a tendency toward socially desirable responding, as measured by

instruments such as the SDRS-5 (Hays et al., 1989). Therefore, discriminant validity would partly be supported by nonsignificant relationships with such measures. Finally, incremental validity, an indication that the construct predicts additional variance outside of other related measures, could be important (Drummond et al., 2019). In the current study, incremental validity can be assessed by examining whether the Es18 accounts for variance in self-related or personality traits beyond general distress measures. This approach tests whether the Es18 captures regulatory resources beyond general symptomatology, aligning with theoretical claims that ego strength represents a foundational capacity supporting complex self-processes.

The purpose of the present study was, therefore, to evaluate the convergent, discriminant, and incremental validity of the Es18 in a university student sample. Convergent validity was assessed through correlations with self-esteem, secure attachment, and theoretically related personality constructs. Discriminant validity was evaluated via social desirability responding. Incremental validity was assessed using hierarchical regression to determine whether the Es18 was related to adaptive traits after controlling psychological distress.

Method

Participants and Procedure

A total of 162 undergraduate students (102 women, 55 men, 5 unidentified) completed a battery of “paper and pencil” questionnaires after providing written informed consent. The average age for the sample was 20.79 years ($SD = 3.24$). Participation was voluntary and students received a small amount of extra course credit for participating. The study protocol was approved by the institutional review board of Texas A&M University, Kingsville. Most participants (71.0%) identified their race/ethnicity as Latinx.

Measures

Ego Strength-18 (Es18). The Es18 (Kelly & Daughtry, 2018) is an 18-item True–False scale derived from Barron’s (1953) 68-item Ego Strength Scale (ES). Items were selected for high item-total correlations with the full scale. Participants responded “true” or “false” to items. Higher total scores indicate greater ego strength. In the original development study, the Es18 demonstrated adequate internal consistency ($\alpha = .78$) and high correlation with a longer ego strength measure ($r = .86$), providing preliminary psychometric support (Kelly & Daughtry, 2018).

Hartmann’s Boundary Questionnaire-18 (BQ18). The BQ18 (Kunzendorf et al., 1997) measures “thin” psychological boundaries, reflecting aspects of cognitive, emotional, and interpersonal permeability. Items are rated on a 5-point Likert scale from 0 (*Strongly disagree*) to 4 (*Strongly agree*); higher scores indicate thinner boundaries. Internal consistency in prior research was $\alpha = .79-.83$ and construct validity was demonstrated through associations with dream bizarreness and daydreaming tendencies (Kunzendorf et al., 1997).

Schizotypal Personality Questionnaire, Brief (SPQ-B). The SPQ-B (Jackson & Claridge, 1991) is a 13-item *yes/no* measure of schizotypal traits (paranoid ideation, unusual perceptions, magical thinking). Higher scores indicate more schizotypy. Reliability for the full SPQ has been reported as $\alpha = .83$, with the brief form demonstrating $\alpha = .72$. Convergent validity is supported through

correlations with measures of schizotypy, psychotic-like experiences, and social functioning (Claridge & Broks, 1984).

Center for Epidemiological Studies Depression Scale, 7-item (CESD7). The CESD7 (Levine, 2013) is a short-form measure of depressive symptoms. Participants respond using a 0 (*Rarely*) to 3 (*Most of the time*) scale; higher scores indicate more depressive symptomatology. It shows good internal consistency ($\alpha = .80-.85$) and correlates highly with the full CES-D, supporting criterion validity (Levine, 2013). Scores predict functional outcomes and psychological distress in community and student samples.

Generalized Anxiety Disorder-7 (GAD7). The GAD7 (Spitzer et al., 2006) assesses generalized anxiety symptoms over the past two weeks. Participants respond using a 0 (*Not at all*) to 3 (*Nearly every day*) scale. Higher scores indicate more generalized anxiety symptomatology. Reliability is good ($\alpha = .92$), and validity is supported by correlations with structured clinical interviews and other anxiety measures (Spitzer et al., 2006).

Self-Splitting Scale (SS). The SS (Gould et al., 1996) is an 8-item factor from a larger splitting scale assessing self-fragmentation and identity inconsistency, characteristic of the defense mechanism of splitting. Participants respond using a 1 (*Strongly disagree*) to 5 (*Strongly agree*) scale, with higher scores indicating more splitting of the self. Reliability has been reported as $\alpha = .85-.87$ (Gould et al., 1996). Construct validity is supported by correlations with measures of borderline personality traits, identity diffusion, and affect dysregulation (Gould et al., 1996).

Self-Esteem Scale-4 (SES4). The SES4 (Tambs & Røysamb, 2014) is a 4-item adaptation of the Rosenberg Self-Esteem Scale. Participants respond using a 1 (*Strongly disagree*) to 4 (*Strongly agree*) scale; higher scores indicate higher self-esteem. Prior research demonstrates acceptable reliability for brief forms ($\alpha = .68-.75$) and convergent validity with self-concept and life satisfaction measures (Tambs & Røysamb, 2014).

Secure Attachment Scale (SAS). The SAS (Mikulincer et al., 1990) is a 5-item factor assessing secure attachment. Participants respond using a 1 (*Not at all*) to 7 (*Very much*) scale. Higher scores indicate a more secure attachment style. Reliability is generally adequate ($\alpha = .65-.70$), with convergent validity supported via correlations with relationship satisfaction, social support, and emotion regulation measures (Mikulincer et al., 1990).

Social Desirability Response Set-5 (SDRS-5). The SDRS-5 (Hays et al., 1989) measures extreme socially desirable responding. Participants respond using a 1 (*Strongly disagree*) to 5 (*Strongly agree*) scale. However, only the extreme responses (1 or 5 depending on the item are scored), resulting in a possible range of 0–5. Higher scores indicate more socially desirable responding. Prior research reports $\alpha = .52-.60$, consistent with its design as a short screening tool. Scores correlate weakly with unrelated personality traits, supporting discriminant validity (Hays et al., 1989).

Statistical Analysis

Reliability was assessed using Coefficient alpha. Independent samples *t*-tests were used to examine gender differences. Pearson correlations were used to investigate relationships between measures. Linear regression was used to examine incremental validity.

Results

Descriptive Statistics and Gender Differences

A significant gender difference was observed for the SAS, $t(154) = 2.14$, $p = .034$, with men scoring higher, and for the GAD7, $t(155) = 1.98$, $p = .049$, with women scoring higher. No gender differences were found on the Es18 or other primary measures; thus, subsequent analyses collapsed across gender.

Correlations

To reduce Type I error from multiple tests, significance for correlations was set at $p < .01$. The Es18 correlated significantly and in theoretically expected directions with BQ18, SPQ-B, CESD7, GAD7, SS, SES4, and SAS. Es18 scores did not correlate significantly with SDRS-5 ($r = -.03$), supporting discriminant validity. Unfortunately, the lower reliability of the SDRS-5 make these results equivocal.

Table 1: Descriptive statistics, reliability, and correlations with the Es18

	<i>r</i>	<i>M</i>	<i>SD</i>	<i>α</i>
Es18		12.34	3.20	.82
BQ18	-.55**	42.15	7.21	.80
SPQ-B	-.57**	4.32	2.10	.72
CESD-7	-.59**	6.15	3.34	.82
GAD7	-.61**	5.72	3.28	.89
SS	-.65**	18.32	4.98	.86
SES4	.49**	10.52	2.31	.69
SAS	.20*	28.15	4.01	.67
SDRS-5	-.03	3.12	1.02	.54

Note: $N = 162$. * $p < .01$ ** $p < .001$. Es18 = Ego Strength Scale, 18-item version; BQ18 = Hartmann's Boundary Questionnaire, 18-item version; SPQ-B = Schizotypal Personality Questionnaire, Brief version; CESD7 = Center for Epidemiologic Studies Depression Scale, 7-item version; GAD7 = Generalized Anxiety Disorder Scale, 7-item version; SS = Self-Splitting Scale (measures self-fragmentation); SES4 = Self-Esteem Scale, 4-item version; SAS = Secure Attachment Scale; SDRS-5 = Social Desirability Response Set, 5-item version.

Incremental Validity

To examine the Es18's variance outside general psychological distress (CESD7, GAD7, SPQ-B), a hierarchical regression was conducted with Es18 as the criterion. Step 1 included distress variables, which accounted for 47.9% of variance, $F(3, 155) = 47.5$, $p < .001$. Step 2 added trait measures (BQ18, SS, SES4, SAS), which explained an additional 9.2% of variance, $F(4, 151) = 8.1$, $p < .001$. These results indicate that the Es18 related to these personality and self-related traits separate from general distress, providing some evidence of incremental validity.¹

Table 2: Hierarchical regression predicting Es18 scores

Predictor	β	t	p
Step 1			
SPQ-B	-.32	4.55	<.001
CESD7	-.22	2.46	.015
GAD7	-.28	3.18	.002
$\Delta R^2 = .479, F = 47.50, p < .001$			
Step 2			
SPQ-B	-.18	2.54	.012
CESD7	-.05	0.53	.595
GAD7	-.16	1.90	.059
BQ18	-.19	2.74	.007
SS	-.24	3.04	.003
SES4	.17	2.55	.012
SAS	-.02	0.30	.765
$\Delta R^2 = .092, F = 8.11, p < .001$			

Note: Es18 = Ego Strength Scale, 18-item version; BQ18 = Hartmann's Boundary Questionnaire, 18-item version; SPQ-B = Schizotypal Personality Questionnaire, Brief version; CESD7 = Center for Epidemiologic Studies Depression Scale, 7-item version; GAD7 = Generalized Anxiety Disorder Scale, 7-item version; SS = Self-Splitting Scale (measures self-fragmentation); SES4 = Self-Esteem Scale, 4-item version; SAS = Secure Attachment Scale; SDRS-5 = Social Desirability Response Set, 5-item version.

Discussion

The present study provides some evidence supporting the reliability, validity, and utility of the Es18 as a brief measure of ego strength in a university student sample. Consistent with prior research (Kelly & Daughtry, 2018), the scale demonstrated adequate internal consistency ($\alpha = .82$), indicating that the reduction from Barron's (1953) original Ego Strength Scale preserved some degree of item homogeneity.

Convergent validity was supported through theoretically predicted correlations. Higher Es18 scores were associated with lower psychological distress, including depression (CESD7), anxiety (GAD7), as well as lower schizotypy (SPQ-B), self-fragmentation (SS), and thinner ego boundaries (BQ18). Conversely, higher scores correlated positively with adaptive constructs such as self-esteem (SES4) and secure attachment (SAS). In terms of preliminary discriminant validity, the Es18 was not significantly related to socially desirable responding (SDRS-5). This finding also suggests the scale reflect genuine individual differences in ego strength rather than self-

presentation tendencies, which some researchers suggest as could be a concern for the longer ES (Thurber et al., 2004/2020). These patterns align with classical psychodynamic frameworks, which emphasize ego strength as a core regulatory capacity facilitating effective emotion regulation, coherent self-representation, and adaptive interpersonal functioning (Cabaniss et al., 2011; Freud, 1923).

The observed negative correlations with distress measures are in line with the hypothesized protective role of ego strength relative to psychological symptomatology. Individuals with higher ego strength appear better able to tolerate negative affect, maintain cognitive and identity coherence, and regulate impulses under stress (Butcher et al., 1989). Associations with schizotypal traits and self-fragmentation further suggest that ego strength also co-exists, or perhaps fosters, cognitive and identity integration, consistent with prior findings that adequate ego functioning reduces vulnerability to identity diffusion, perceptual anomalies, and maladaptive defensive processes (Gould et al., 1996; Jackson & Claridge, 1991).

Positive correlations with self-esteem and secure attachment hint towards the relevance of ego strength to adaptive self-regulation and relational functioning, which is in line with contemporary psychodynamic theory (Cabaniss et al., 2011). Also in line with theory, high ego strength was associated, and perhaps supports, coherent self-concepts, positive self-evaluation, and secure relational patterns. These functions are generally considered important for emotional well-being and interpersonal satisfaction. These findings align with work suggesting secure attachment is associated with affect regulation and resilience (Mikulincer et al., 1990) and suggest that ego strength may function as a psychological resource facilitating both intrapersonal and interpersonal capacities. From a contemporary personality perspective the Es18 also relates to constructs such as ego resilience, self-regulation, and general adaptive functioning (Block & Block, 1980; Bonanno, 2004; Tugade et al., 2004), positioning ego strength as a promotive factor for positive outcomes beyond the mere absence of psychopathology.

Hierarchical regression analyses supported the incremental validity of the Es18. Psychological distress variables accounted for 47.9% of the variance in Es18 scores, while trait-level constructs related to hypothetical ego functions (ego boundaries, self-fragmentation, self-esteem, attachment) explained an additional 9.2%. These results suggest that the Es18 shares meaningful variance in self-regulatory and personality traits outside of general distress. This supports ego strength's conceptualization as an upstream resource influencing multiple domains of functioning, including identity integration, emotional regulation, and relational security.

The Es18's brevity and adequate psychometric properties offer substantial practical advantages relative to longer measures of ego strength. It reduces participant burden and can be included in multi-instrument studies without compromising reliability. Its relationship with Barron's (1953) original measure suggests conceptual fidelity to classical ego strength constructs while maintaining applicability in contemporary research contexts, including studies of resilience, coping, and personality development. By providing a short yet valid measure, the Es18 facilitates empirical investigation of the mechanisms linking ego strength to psychological health and adaptive functioning.

Despite these strengths, certain limitations should be noted. The sample consisted primarily of younger university students identifying as Latinx, limiting generalizability to older adults,

clinical populations, and potentially to other cultural groups. All measures were self-report, which raises the possibility of shared method variance and presentation bias, although inclusion of a social desirability scale mitigates some of the latter concern. Future research should incorporate multi-method assessments, including informant reports, behavioral indicators, and longitudinal or experimental designs, to further validate the Es18 and clarify directional or causal relationships between ego strength, self-regulatory processes, and well-being. Examining the scale in clinical populations could also establish its utility in assessing ego functioning in individuals with fragmentation, poor reality testing, or affect dysregulation.

In conclusion, the present study provides some evidence supporting the psychometric properties and practical utility of the Es18. The scale exhibits adequate internal consistency, theoretically coherent convergent and discriminant validity, and meaningful associations with variables outside of distress, suggesting incremental validity. Though preliminary, these findings provide support for Es18 as a relatively reliable, valid, and efficient measure of ego strength that captures individual differences in both adaptive and maladaptive personality processes. By linking classical psychodynamic constructs to contemporary personality research, the Es18 offers both a practical assessment tool and a framework for understanding the foundational role of ego strength in emotional regulation, identity integration, and relational functioning.

Footnote: 1. As pointed out by a reviewer, the directionality of our regression (that is, using the Es18 as the criterion rather than predictor), is not the typical approach for incremental validity. However, given the modest aims of our study paired with acknowledgement that the current regressions simply demonstrate controlled correlations, not directionality, for our purposes, determining separate variance outside of distress was considered to provide adequate preliminary support of incremental validity.

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